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Staphylinid Beetles Found in Old Gold Mines of
the Island of Sado, Central Japan*

With 4 Text-figures

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ABSTRACT Three species of staphylinid beetles are recorded from two abandoned gold mines in the Island of Sado off central Honshu, Japan. Two of them are well known epigean species, showing no peculiarities adaptive to subterranean environment. It is probable that these rove beetles were attracted to the mine either by the existence of bats' excreta or by the presence of humid environment. The third species seems to be a new troglophilous form of *Lobrathium yoshidai*, to which the new subspecific name *sadoensis* is given in the present paper.

Only two species of staphylinid beetles have hitherto been reported from abandoned mines of Japan. They are *Lathrobium nomurai* Nakane (1955, p. 29, pl. 3, fig. 17) from Tsuruoka-kô Mine and *Quedius fodinarum* S. Uéno et Y. Watanabe (1966, p. 323, figs. 1, 3) from Ôtani-kô Mine, both lying in Ôita Prefecture of eastern Kyushu. Recently, one of the authors (Baba) made several visits to the Island of Sado and collected a small number of staphylinid beetles in two abandoned gold mines at the northwestern part of the island. One of his trips was made in collaboration with Dr. Shun-Ichi Uéno, Miss Kyôko Kato and her parents.

This collection was later studied and classified into three species. One of the three, taken in baited traps, is microphthalmic and to some extent depigmented, but seems to be conspecific with *Lobrathium yoshidai* Adachi (1955, p. 35) hitherto known from southern Kwantô in Honshu. It is, however, different from typical specimens in both the external and genitalic characters, and seems to the authors to form a distinctive geographical race. The remaining two are no doubt trogl-xenous, showing no modification adaptive to subterranean environment. All the species are recorded in the present paper for the first time from the Island of Sado.

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Lesteva plagiata Sharp

Lesteva plagiata Sharp, 1889, Ann. Mag. nat. Hist., (VI), 3, p. 472.—Bernhauer & Schubert, 1910, Coleopt. Cat., pars 19 (Staphylinidae I), p. 72.—Adachi, 1957, J. Tôyô Univ., (11), p. 196.—Watanabe, 1964, Insects of Niigata Prefecture, (8), p. 9.

Lesteva fenestrata: Nakane (*nec* Sharp), 1963, Icon. Ins. Japon. Col. nat. ed., 2, p. 83, pl. 42, fig. 2.

Specimens examined. 2 ♂♂, 3 ♀♀, Daini-yakichi-mabu Mine, Higashino, Sawané, Sawada-machi, Is. Sado, 11–XI–1972, S. Uéno and K. Kato leg.

Distribution. Japan (Honshu, Kyushu).

Remarks. All the specimens examined perfectly agree with epigean individuals. This species was originally described on the specimens from Yokohama, Oyayama and Miyanoshta, and has since been reported from various localities in Honshu and Kyushu. It is usually found in the vicinities of streams, so that its occurrence in an abandoned mine is rather exceptional, even though five specimens in total were taken in the same mine by a single visit.

Quedius (Microsaurus) simulans Sharp

Quedius simulans Sharp, 1874, Trans. ent. Soc. London, 1874, p. 25.

Quedius (Microsaurus) simulans: Bernhauer & Schubert, 1916, Coleopt. Cat., pars 67 (Staphylinidae V), p. 434.—Adachi, 1957, J. Tôyô Univ., (11), p. 179.—Watanabe, 1964, Insects of Niigata Prefecture, (8), p. 23.

Specimens examined. 2 ♀♀, Daini-yakichi-mabu Mine, Higashino, Sawané, Sawada-machi, Is. Sado, 11–XI–1972, S. Uéno and K. Kato leg.; 7 ♂♂, 5 ♀♀, same mine, 11, 24–XI–1972, K. Baba leg.

Distribution. Japan (Honshu).

Remarks. This species is considerably different from the other Japanese members of the subgenus *Microsaurus* both in the coloration and in the antennal structure, i.e., the whole surface is uniformly black and the antenna is stout, having distinctly transverse 4th to penultimate segments. In most cases, it is found under dead leaves accumulating on forest floors, although it was originally described on the specimens found in heaps of refuse. The Sado specimens recorded above were obtained at various spots from near the entrance to the depth of about 100 m. All of them are identical with epigean individuals, and no morphological adaptation to subterranean environment can be detected. They were probably attracted by bats' excreta and entered into the depth of the mine.

Lobrathium (Lobrathium) yoshidai sadoensis subsp. nov.

Body length: 8.5 mm (from front margin of head to anal end).

Body narrow, nearly parallel-sided and moderately depressed above. Reddish

brown and moderately shining, with apical half of elytra, anal end and legs testaceous.

Head subquadrate, somewhat depressed above, almost as long as broad and a little broader than pronotum (1.12: 1), widest just behind eyes and gently convergent towards the base, with lateral sides feebly arcuate and well constricted at neck; disk gently elevated, sparsely with strong and rather coarse punctures like on front, except for impunctate vertex; latero-posterior parts also covered extensively with setiferous punctures which are much finer and much more numerous than on

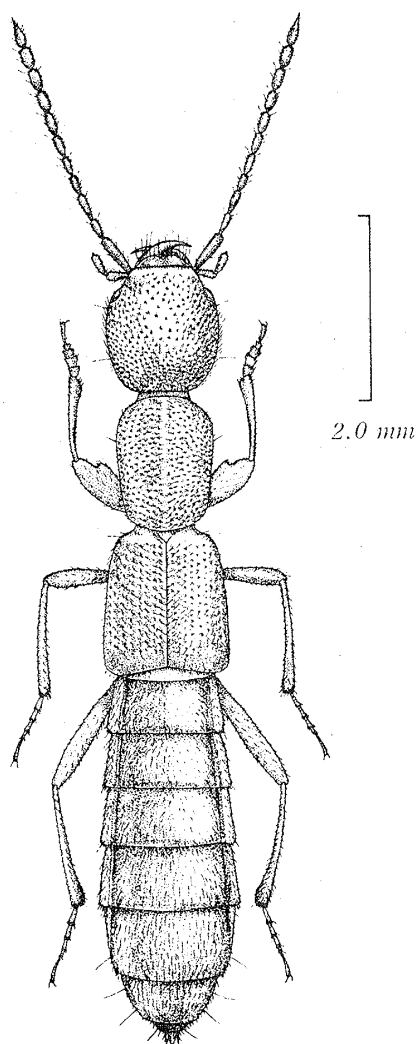


Fig. 1. *Lobrathium (Lobrathium) yoshidai sadoensis* subsp. nov., ♂, of Jûnigô-kô Mine.

the disk, the bristles being brownish and decumbent forwards; eyes extremely small and flat, longitudinal diameter one-fifth as long as postocular region. Antennae elongate, extending a little beyond the basal margin of pronotum and not thickened

towards apex, proximal two or three segments polished and the remainings more or less opalescent; each segment distinctly longer than broad, 1st robust and distinctly dilated towards apex, 2nd short, less than a half as long as 1st, 3rd the longest, almost 1.5 times as long as 2nd, 4th to 10th subequal in length to one another, each nearly twice as long as broad, the apicalmost nearly 1.5 times as long as 10th and subacuminate towards the tip.

Pronotum oblong, evidently longer than broad (1.33: 1), widest behind anterior angles and gradually convergent posteriad; sides almost straight seen from above, anterior margin slightly emarginate, posterior margin nearly straight, both finely bordered; anterior angles rounded off and not visible from above, posterior angles narrowly rounded; surface somewhat sparingly and rather coarsely punctured, though there is a broad longitudinal smooth band along the median line throughout the length of pronotum. Scutellum small and triangular, bearing a few pubescence on the surface. Elytra oblong, somewhat widening behind, a little longer than broad (1.13: 1) and slightly broader than pronotum (1.22: 1); surface rather sparingly covered with golden pubescence decumbent backwards, and with coarse and moderately close punctures indistinctly arranged in rows; hind margin somewhat emarginate. Hind wings present, though somewhat reduced and not reaching the hind margin of fifth abdominal tergite.

Abdomen elongate and gradually divergent to fifth visible segment; surface of tergum densely covered with extremely fine punctures and fine brownish pubescence. In male, last abdominal sternite semicircularly excised at the middle of hind margin;

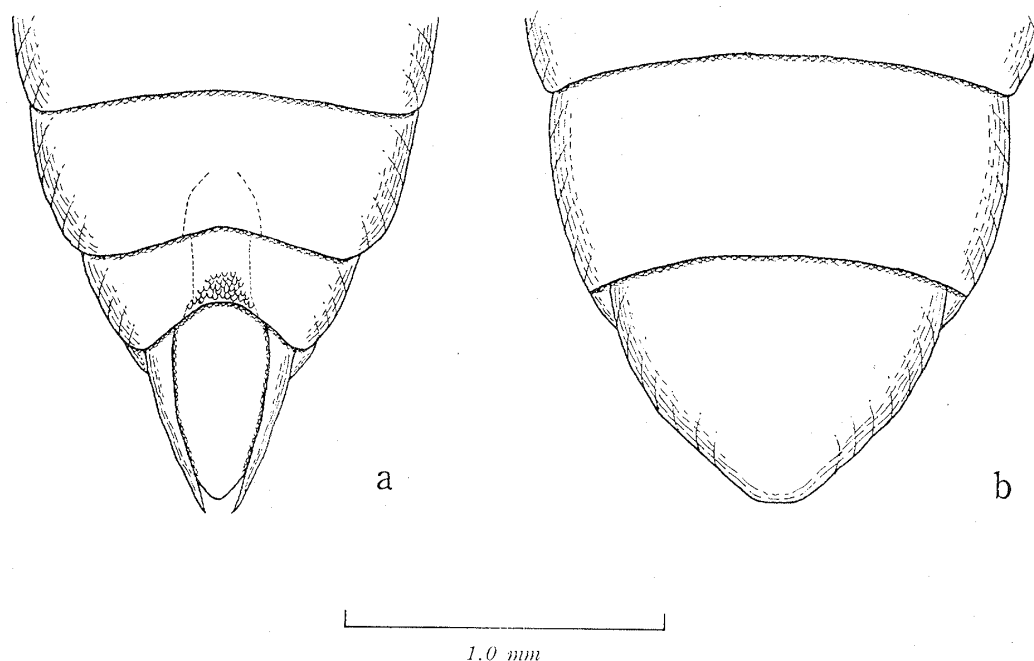


Fig. 2. Abdominal segments of *Lobrathium (Lobrathium) yoshidai sadoensis* subsp. nov.; a, last four sternites of male; b, last three sternites of female.

in front of the excision there is a semicircular depression, the surface of which is rather closely and coarsely asperate; before the asperate area the sternite is feebly and longitudinally depressed along the median line; penultimate sternite also broadly and shallowly emarginate at the middle of hind margin, and with a shallow horseshoe-shaped depression in front of the emargination. In female, the sternites are simple.

Legs relatively slender; anterior femora remarkably thickened, and provided with a broad blunt tooth at apical one-third on the inner face in both sexes.

Male genital organ relatively slender and moderately sclerotized, with the exception of style which is heavily sclerotized. Median lobe, viewed dorsally, much shorter than style and gradually narrowed in front but abruptly convergent near narrowly rounded apex; basal part large, more or less globular and somewhat curved ventrally. Style elongate and symmetrical, apical half strongly curved dorsally in profile, widest at one-third from base, gently convergent both basad and apicad, and strongly constricted near one-third from apex; apical part behind this constriction forming a lanceolate lobe, the apex of which is produced behind to narrowly rounded tip.

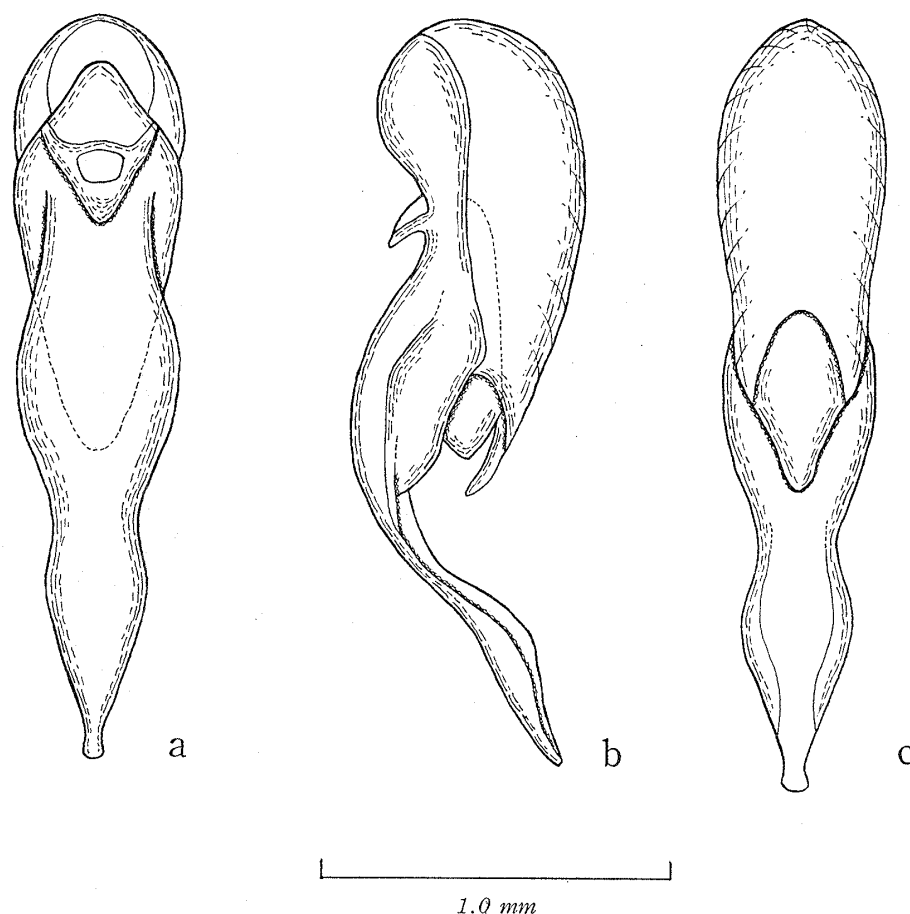


Fig. 3. Male genital organ of *Lobrathium (Lobrathium) yoshidai sadoensis* subsp. nov.; a, ventral view; b, lateral view; c, dorsal view.

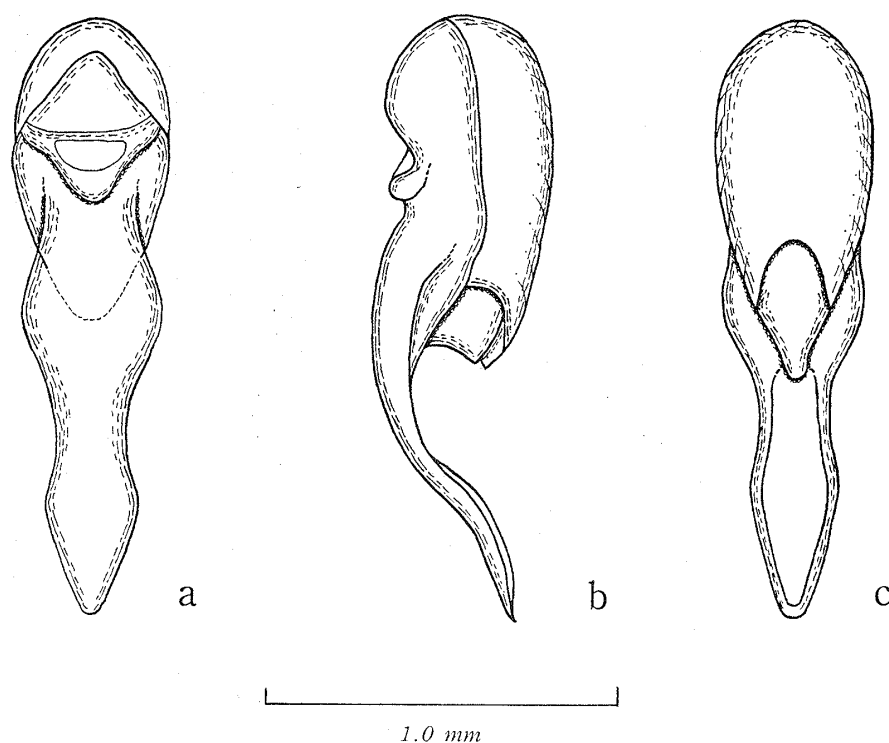


Fig. 4. Male genital organ of *Lobrathium* (*Lobrathium*) *yoshidai yoshidai* Adachi, of Hiratsuka in Kanagawa Pref.

Type-series. Holotype: ♂, allotype: ♀, Jûnigô-kô Mine, Dôyû-no-warido, Aikawa-machi, Is. Sado, 15-X-1972, K. Baba leg. (preserved in the collection of the National Science Museum, Tokyo). Paratypes: 1 ♂, 7 ♀♀, same data as the holotype and distributed to the National Science Museum, Tokyo, the Entomological Laboratory of Tokyo University of Agriculture, and Baba's private collection.

Distribution. Japan (Is. Sado).

Remarks. In general appearance, the present new subspecies resembles the nominate one (Adachi, 1955, p. 35) from Hiratsuka in Kanagawa Prefecture, but can easily be distinguished from the latter by much larger size and different coloration of the elytra. The male genital organ is similar to that of the nominate subspecies, but slight differences are observed in the shape of style.

All the specimens known were found in baited traps which were set at the depth of 60–100 m from the entrance.

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